

NOTES

Fatal Shark Attack, Oahu, Hawaii, December 13, 1958¹

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ON DECEMBER 13, 1958, a large shark believed to be *Galeocerdo cuvieri*, the tiger shark, was responsible for the death of 15-year-old William (Billy) Weaver in water about 12 feet in depth off Lanikai on the windward (east) coast of the island of Oahu, Hawaii. Although the story of the tragedy was well covered in the local newspapers, a condensed version has been prepared which includes information of interest to scientists who are concerned with factors motivating shark attack. In preparing the account which follows, conflicting stories have been resolved and additional information has been obtained by correspondence and interview with several of the persons directly or indirectly involved. Additional information on shark identification, shark fishing, etc., was supplied by the staffs of the Board of Agriculture and Forestry, Division of Fish and Game, and the Bureau of Commercial Fisheries, Pacific Oceanic Fisheries Investigation.

DESCRIPTION OF THE INCIDENT

A party of six boys including the victim (Billy Weaver) and five friends (Terry Oakland, age 14; Tom Replogle, 14; Garrett Goo, 13; Brook Collins, 10; and Charles Collins, 9) were swimming and surfing about noon off a reef near Twin Islands (Mokulua Island) about $\frac{3}{4}$ mile off Lanikai (Fig. 1). They had three surfboards which were light green, red and "natural" in color, three air mattresses which were red on one side and blue on the other, and an 8-foot sailboat, without mast or sail, which was white in color and anchored near the reef.

¹ Contribution No. 125 of the Hawaii Marine Laboratory, University of Hawaii. Manuscript received April 6, 1959.

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The sky was clear but the water was rough with whitecaps and good-sized waves. The boys kept together; never was one more than 75–100 feet from the others.

About 1 p.m. Brook Collins was resting in the boat with his surfboard across it; Charles Collins was resting on his surfboard beside the boat, holding on to the anchor line—he was afraid of the waves after "pearl diving" on one. The four older boys were surfing off the reef. Garrett Goo and Terry Oakland, on air mattresses, and Tom Replogle, on the light green surfboard, caught a wave and rode a short distance. Billy Weaver, on an air mattress, failed to catch the wave. When about 50 yards away, the boys noticed that Weaver was clinging to the mat, apparently in difficulty. On hearing a feeble cry for help, Goo swam over, saw blood in the water, and realized that Weaver had lost a leg. The three boys attempted to support the victim and called to Brook Collins to bring the boat over. After some difficulty in freeing the anchor from the coral, Brook Collins hauled it up and started rowing. As the boat was coming too slowly, Garrett Goo swam to it, climbed aboard, and pushed the surfboard off the boat to make more room for rowing. Brook Collins, standing up in the boat, saw a large shark surface 30 feet away, and screamed "Shark." The two boys supporting the victim pushed him toward the reef, and swam frantically to the boat. By the time they reached the boat he had disappeared. As they could not approach the spot where he had been last seen without risk of swamping the boat in the waves, the boys rowed to shore and summoned help.

A Fire Department rescue squad arrived at 2:30 p.m. and sped to the scene in a borrowed 25-foot Chris-Craft boat. Local residents in other boats joined in the search. The body was finally

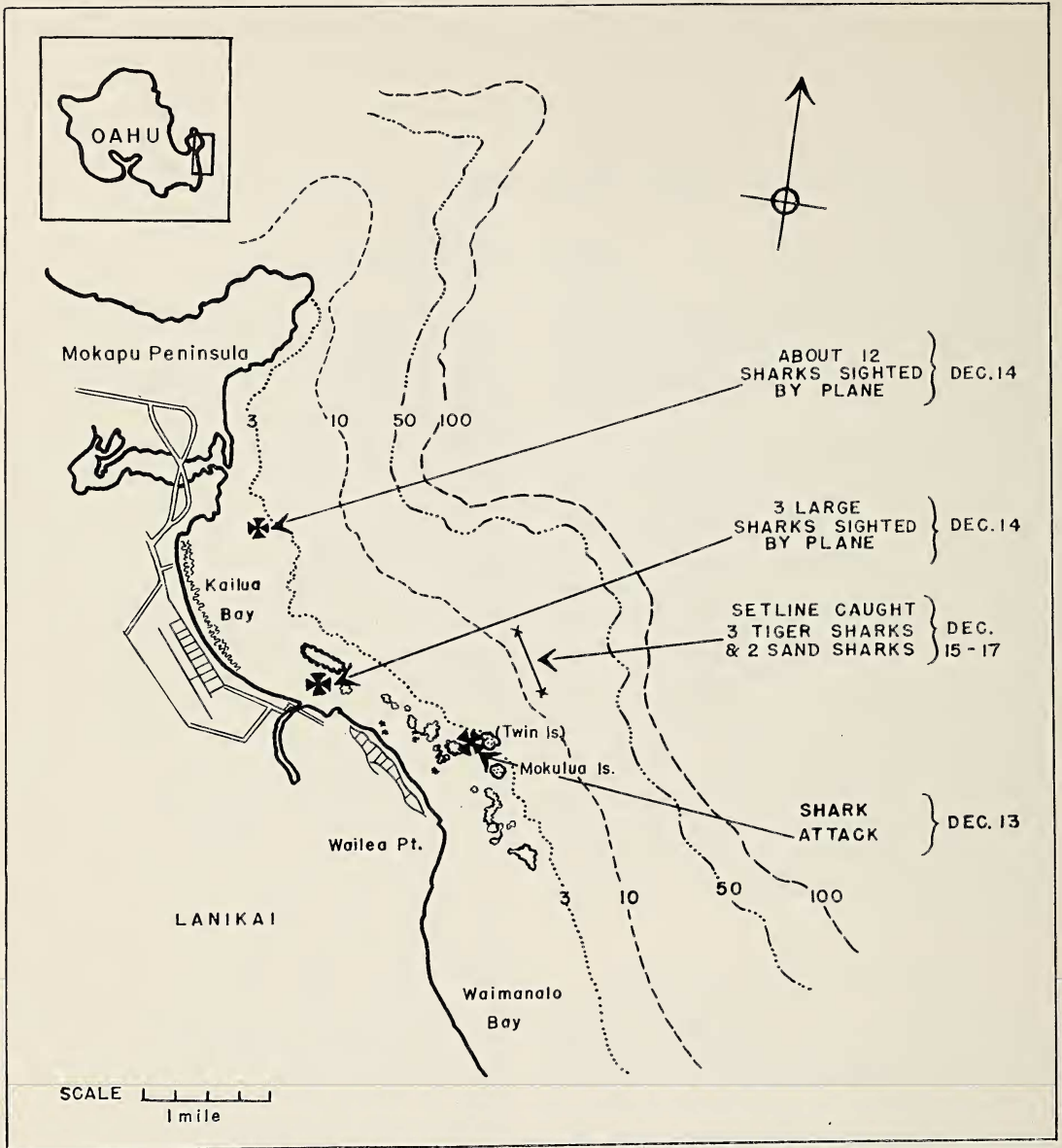


FIG. 1. Coastline of Oahu, showing places where sharks were sighted.

located by a helicopter crew from Kaneohe Marine Air Station in a hole in the reef seven feet deep, and it was recovered by a local resident, John G. Ferreira, by skin diving. The shark, variously estimated at 15 to 25 feet in length, was still cruising nearby, its dorsal fin about 1½ feet out of the water. Attempts to revive the boy with artificial respiration both on board the boat and on shore were unsuccessful. A deputy coroner stated the shark bite had

stripped away the flesh six inches above the knee and completely removed the right leg from the knee joint. The victim died from loss of blood, drowning, shock, or a combination of all three.

ATTEMPTS TO CATCH THE SHARK

On December 14, 1958, attempts were made by employees of the Division of Fish and Game

and by local residents to capture the shark. The Fish and Game employees set an 8-hook shark setline in the shallow water off the reef where the incident had taken place but without success. In the meantime, Piper Cub pilots searching the area spotted two schools of sharks in the adjacent waters of Kailua Bay (Fig. 1). One group of three large sharks was reported cruising just off Flat Island, 200 yards offshore from the public beach. The second school of about a dozen sharks was spotted on the north end of the bay. Local residents converged on both areas hoping to kill the sharks with high-powered rifles but were unsuccessful.

From December 15 through December 17, 1958, under the personal direction of C. Eric Reppun, President, Board of Agriculture and Forestry, and Michio Takata, Director, Division of Fish and Game, the Division's research vessel "Makua" fished a 24-hook setline (flagline or buoyed longline) offshore from the reef in about 70–80 feet of water (Fig. 1). The catch consisted of three tiger sharks and two sand sharks. Two of the tiger sharks were 12 feet in length and weighed 750–800 pounds; the third was 11 feet in length and weighed 410 pounds. The two sand sharks (*Eulamia menisorrhah?*) were eight to nine feet in length and weighed about 350 pounds.

IDENTITY OF THE SHARKS

It seems most likely that the fatal attack was by a large tiger shark (*Galeocerdo cuvieri*). One of the searchers described the shark (to Herbert Mann, Bureau of Commercial Fisheries) as having blotches on its sides and a blunt nose, thus eliminating most other local species including the great white shark (*Carcharodon carcharias*). Moreover, in the recent six months of shark fishing to assess local abundance, the Division's ship "Makua" has caught only two species by setline in inshore water (50–120 feet in depth)—34 tiger sharks and 33 sand sharks. The largest tiger shark taken during this period, 14½ feet in length and 1,200 pounds in weight, approaches the reputed size of the Lanikai killer. However, an element of uncertainty is introduced by Brook Collins' observation that the dorsal fin of the shark appeared black along the

edge, suggesting some species other than the tiger.

COMMENT ON SHARK ATTACK

It is noteworthy that the fatal attack occurred before the swimmers were aware that a shark was in the vicinity. If the boys had been skin diving, rather than surfing, they may have discovered its presence. If the shark surfaced prior to the attack, its dorsal fin must have passed unnoticed in the rough surface water.

It is noteworthy that three of the four boys exposed to attack were using air mattresses. Manipulation of the mattress in pushing, boarding, and paddling, requires much more activity than does a surfboard. It is possible that the shark was attracted to the area by this unusual commotion. The victim is likely to have been thrashing his arms and legs extensively while attempting to catch the wave which carried away his companions.

Tom Replogle reported that he had seen coconut floats, such as are used to mark fish traps, near the scene of the tragedy. A turtle was also observed nearby. It is possible that the shark was attracted to the area by fish caught in the traps or by the turtle.

Although there is no on-the-spot record of water temperature, it was probably about 23° C. This temperature was recorded at the time of the tragedy for the salt water system at the Hawaii Marine Laboratory, Kaneohe Bay, some five miles distant. The water is pumped continuously from a depth of about 10 feet.

SHARK ABUNDANCE

Although quantitative data are not available over a sufficient period of time to measure changes in shark abundance, observations by fishermen and skin divers indicate the abundance has increased in the last few years. This has been attributed to several possible causes:

(1) Cessation of shark fishing because of a recent law (Hawaii Food, Drug and Cosmetic Act, 1941) requiring the labelling of ingredients in Japanese-style fish cake. Although most of the sharks used for this purpose were taken incidental to tuna longlining, which is still active, it is possible that the fishermen now cut the leader line when a shark is captured, allowing

it to go free. This practice would speed up the handling of the gear when using the recently introduced automatic hauler.

(2) Reduction in the inshore fish population, inducing sharks to frequent shallow waters and to become bolder in their search for food. There is not much doubt that the reef fish population is at a low level of abundance because of both commercial and sport fishing pressure. The latter must have increased greatly with the introduction of SCUBA diving gear.

(3) Increase in shark population for some unknown reason. Possibly an increase in abundance occurred following the war period of reduced effort in the longline fishery.

There appears to have been an increase in shark attacks during the past 10 years as compared with a previous 60-year period. Of the 5 (perhaps 6) known fatalities since 1886, 3 (including the present) have occurred in the last 10 years. Of the 11 incidents involving injury by sharks since 1886, 5 have occurred in the last 10 years. Whether the increase is due to the increased number of swimmers and consequent increased number of exposures is unknown.

PUBLIC REACTION

There was immediate and widespread concern

over the shark incident, together with public demand for action to reduce the hazard. Bounties were offered by a private individual (Bill Wills, \$20 each for 10 sharks) and by a radio station (KPOA, \$100 per shark over 15 feet, \$25 per smaller shark for sharks caught until the end of December in the vicinity of the tragedy). An action program for reducing shark abundance on a continuing basis was proposed by the Board of Agriculture and Forestry and endorsed by several windward Oahu associations on December 18, 1958. Its activation is contingent on funds to be raised by public subscription. The plans call for a one-vessel, scientifically directed shark fishing program embracing all inshore waters of Oahu. Should this become a reality, efforts will be made to not only control the local shark population but at the same time to gain information on the species composition, abundance, distribution, life history, and behavior of the sharks.

The Billy Weaver Shark Control Program was started April 1, 1959, using the vessel "Holo-kahana I" with Fred J. Inouye as master. Using three units of 24-hook long-line gear, 595 sharks were caught from the inshore waters of Oahu during the remainder of the year. Of these, 71 were tiger sharks.